

# WEAK CONVERGENCE ANALYSIS FOR STOCHASTIC EVOLUTION PDES

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I will review the literature on the weak convergence analysis of numerical methods for stochastic evolution problems driven by noise. Then I will present a new method of proof, which is based on refined Sobolev-Malliavin spaces from the Malliavin calculus. It does not rely on the use of the Kolmogorov equation or the Ito formula and is therefore applicable also to non-Markovian equations, where these are not available. We use it to prove weak convergence of fully discrete approximations of the solution of the semilinear stochastic parabolic evolution equation with additive noise as well as a semilinear stochastic Volterra integro-differential equation.

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